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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/391,123	09/07/1999	BYRON HUA CHEN	9-7-4-5	8107

7590 01/16/2002

DOCKET ADMINISTRATOR
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EXAMINER

CRAVER, CHARLES R

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

GB

Office Action Summary

Application No.

09/391,123

Applicant(s)

Chen et al

Examiner

Charles Craver

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Sep 7, 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 1, line 17, a US Patent Application Serial Number must be entered.

Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Reference number "10", page 1 lines 29-30.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Reference number "13", FIG 1.

Correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1-7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Westcott et al, US Pat 6,298,083.

Regarding claim 1,

Westcott discloses a method for detecting a plurality of signals (col 3 line 66-col 4 line 53), comprising the steps of

measuring a strength of signals transmitted on frequencies associated with a signal to be detected,

determining an integration time based on said signal strength (col 7 line 65-col 8 line 36), and

finding the signal to be detected using a correlator for a given integration time (col 4 lines 16-29, col 5 lines 26-36, col 6 line 66-col 7 line 16).

Regarding claim 2,

Westcott discloses that a shorter search is used when a stronger signal is present (col 5 lines 29-33), based on the weighted number and time calculated for the integration time (col 8 lines 4-19), which reads an inverse relation.

Regarding claims 3 and 4,

Westcott discloses that the integration time may be calculated using a mathematical equation (col 8 lines 4-14), or using a statistical model (col 7 lines 46-52), which reads as a curve.

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Regarding claims 5 and 6,

The integration period must inherently have a minimum number of cycles and a maximum number of cycles in order to properly enable a correlation to take place; thus, since such a minimum and maximum would correspond to a given value of signal strength, such values are read as thresholds.

Regarding claim 7,

Westcott discloses that the signals received are estimated, given that the process is for searching within a frequency range so as to lock onto a wanted signal (col 1 lines 47-54, col 4 lines 44-62, col 56 lines 16-35).

Regarding claim 10,

Westcott discloses that the received frequency may differ from the original frequency by Doppler shift (col 1 lines 30-46); as such, in the case that such a shift is minimized, the received frequency would be experimentally equal to that which was transmitted.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 8, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westcott as applied to claim 1 above, and further in view of the applicant's disclosure of prior art.

Regarding claim 8,

While disclosing applicant's invention of claim 7 as shown above, Westcott does not expressly disclose that the estimated frequency is based on a reference point within a sector in which a receiver is located. However, the applicant admits as prior art such a system, specifically a WAG system (page 5 lines 3-18), in which such a presupposition of a needed frequency is based on receiver location in order to save time. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such a step in the GPS signal capturing method of Westcott, as Westcott discloses that the longer it takes to lock on to a signal, the more time and energy is wasted (col 2 lines 31-54).

Regarding claim 9,

While disclosing applicant's invention of claim 1 as shown above, Westcott does not expressly disclose that the estimated frequency is based on a received search message. However, the applicant admits as prior art such a system, specifically a WAG system (page 5 lines 12-18), in which such a presupposition of a needed frequency is based on information received from a WAG server. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such a step in the GPS signal capturing method of Westcott, as Westcott discloses that the longer it takes to lock on to a signal, the more time and energy is wasted (col 2 lines 31-54).

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Regarding claim 11,

The applicant further recites that the GPS receiver may use more than one GPS satellite signal to determine location (page 2 lines 7-14 and 25-32). In such a case, a second signal would be received, integrated and correlated in the same manner as the first signal.

8. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westcott as applied to claim 1 above, and further in view of Zhodzishsky et al, US Pat 6,313,789.

Regarding claim 12,

While disclosing applicant's invention of claim 1 above, Westcott does not disclose that a power spectrum density ratio is taken into account when determining the integration time.

Zhodzishsky states that the width of a GPS signal tracking window (col 2 line 23-col 3 line 30) such as that taught by Westcott varies with the ratio of the signal power to the spectral density (col 43 lines 11-29).

As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to add such a calculation to the equation of Westcott; given that such a ratio affects the integration window, acknowledging such an effect would provide for a more exact estimate of the needed integration time, and thus avoid the need to redo the act of integrating and correlating to capture a signal to which a lock was not properly made.

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Regarding claims 13 and 14,

It would have been further obvious to one of ordinary skill in the art that, since a low ratio implies a lower-quality signal and thus a longer integration time would be necessary in such a situation, to use said ratio in the calculation of the integration time such that a low ratio implies a longer integration time and a higher ratio implies a shorter integration time.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Litton et al discusses a GPS receiver.

Camp, Jr. et al discusses GPS reception utilizing different integration times.

Counselman III discusses GPS signal reception.

11. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for formal communications intended for entry)

Or:

(703) 872-9314 (for informal or draft communications, please label "PROPOSED"

or "DRAFT")

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Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, sixth floor (receptionist).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Craver whose telephone number is (703) 305-3965.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

CC
C. Craver
January 11, 2002


CHAS. CRAVER
JAN 11 2002